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(54) SUCTION CLEANER AGITATOR HOUSINGS

(71) We, HOOVER LIMITED, a Company registered under the laws of England, of Perivale, Greenford, Middlesex, UB6 8DX, England, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to suction cleaner agitator housings.

According to one aspect of the present invention, a suction cleaner agitator housing comprises an elongate body having a downwardly facing cavity in which an agitator is arranged to be mounted for rotation about a horizontal axis, the housing having a front edge and a rear edge with a suction connection adjacent one end of the rear edge the cavity being defined by an internal wall extending between the front and rear edges with a groove formed in a rear part of the wall, the groove increasing in transverse cross-section towards the suction connection. A main portion of the wall is preferably substantially cylindrical and has an axis substantially coincident with the agitator axis. The groove and the main portion meet at a lip which extends in a spiral.

Preferably the groove includes an upwardly and rearwardly extending substantially flat portion or portions which merge into a downwardly and rearwardly extending flat portion or portions. The spiral lip may terminate opposite one edge of the suction connection and then extend substantially parallel to the axis of the agitator.

According to another aspect of the present invention, a suction cleaner has an agitator housing, the housing including a cavity in which an agitator is mounted for rotation about a horizontal axis, the cavity having a wall extending in a curved manner upwardly and rearwardly from a front edge of the housing and then downwardly and rearwardly towards a rear edge of the cavity an upwardly and rearwardly extending groove being formed in the rear part of the wall, the groove being of a generally wedge shape in transverse cross-section, and increasing in depth along the cavity towards an end at

which a suction connection is disposed, the curved wall and the groove merging by way of a lip which extends spirally about the agitator axis.

The invention may be carried into practice in a number of ways but one specific embodiment will now be described by way of example with reference to the accompanying drawings, in which:

Figure 1 is a perspective view of a suction cleaner nozzle housing according to the present invention;

Figure 2 is an underplan view of the housing of Figure 1;

Figure 3 is an underplan view of the agitator housing with the agitator and its bottom plate removed;

Figure 4 is a sectional elevation on the line 4—4 of Figure 3;

Figure 5 is a sectional side elevation on the line 5—5 of Figure 3;

Figure 6 is a sectional elevation on the line 6—6 of Figure 3;

Figure 7 is a sectional elevation on the line 7—7 of Figure 3;

Figure 8 is a partial perspective of the agitator housing as viewed from the front and inverted; and

Figure 9 is a scrap perspective view of the agitator housing as viewed from the right-hand side of Figure 8 and inverted.

Figures 1 and 2 show the body 10 of an upright vacuum cleaner having forward wheels 12, shown in Figure 2, and rear wheels 14 shown in Figures 1 and 2. The housing has a bottom plate 16 enclosing an agitator housing 28 in which is situated a cylindrical brush agitator having a series of spiralling brushes 76.

As shown in Figure 2, the wheels 12 and 14 are mounted on a framework 20 having a pair of bent struts 22 which place the forward wheels 12 toward the medial portion of the housing. The framework 20 and the wheels 12 and 14 form a carriage 24 on which the remainder of the body 10 of the cleaner is pivotally mounted. This pivotal relationship is obtained by means of a pair of elongate struts 26 which are affixed to the remainder of the nozzle and which are pivoted in a man-

pickup. The lip 42 acts in concert with the agitator to provide a dirt trap so that the dirt is slowly moved along this edge to the suction connection.

5. WHAT WE CLAIM IS:—

10 1. A suction cleaner agitator housing comprising an elongate body having a downwardly facing cavity in which an agitator is arranged to be mounted for rotation about a horizontal axis, the housing having a front edge and a rear edge with a suction connection adjacent one end of the rear edge, the
15 cavity being defined by an internal wall extending between the front and rear edges with a groove formed in a rear part of the wall, the groove increasing in transverse cross-section towards the suction connection.

20 2. A housing as claimed in Claim 1, in which a main portion of the wall is substantially cylindrical and has an axis substantially coincident with the agitator axis.

25 3. A housing as claimed in Claim 2, in which the groove and the main portion meet at a lip which extends in a spiral.

30 4. A housing as claimed in Claim 2 or Claim 3, in which the groove includes an upwardly and rearwardly extending substantially flat portion or portions which merge

into a downwardly and rearwardly extending flat portion or portions.

5. A housing as claimed in Claim 3, in which the spiral lip terminates opposite one edge of the suction connection and then extends substantially parallel to the axis of the agitator. 35

6. A suction cleaner, having an agitator housing, the housing including a cavity in which an agitator is mounted for rotation about a horizontal axis, the cavity having a wall extending in a curved manner upwardly and rearwardly from a front edge of the housing and then downwardly and rearwardly towards a rear edge of the cavity, an upwardly and rearwardly extending groove being formed in the rear part of the wall, the groove being of a generally wedge shape in transverse cross-section, and increasing in depth along the cavity towards an end at which a suction connection is disposed, the curved wall and the groove merging by way of a lip which extends spirally about the agitator axis. 40 45 50

7. A suction cleaner substantially as specifically described herein with reference to the accompanying drawings. 55

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Chartered Patent Agents,
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